#14

CLAIMS

1. A method of creating a decision engine including a Bayesian network, comprising:

Retrieving data from a client database and forming a focus database, wherein the retrieving includes retrieving data from a static customer database and retrieving data from a data stream;

Employing an expectation maximization algorithm to provide a value to valueless records in the focus database;

Applying a set of initial rules to the focus database to form at least two nodes;

Applying a first learning process to determine a set of arcs to be applied between the at least two nodes;

Applying a second learning process to determine a set of states to be applied within each node;

Applying a third learning process to determine a set of probabilities applicable to the states learned in the second learning process; and

Applying a fourth learning process to update a structure of the at least two nodes, the set of arcs, the set of states within each node, and the set of probabilities for the states.

2. The method of claim 1, wherein the first learning process includes parameter learning.

3. The method of claim 1, wherein the second learning process includes state learning.

4. The method of claim 1, wherein the third learning process includes parameter learning.

5. The method of claim 1, wherein the fourth learning process includes structural learning.

6. The method of claim 1, wherein the client database is a relational database.

7. The method of claim 1, further comprising creating, accessing, and modifying an AD tree.

8. The method of claim 1, further comprising employing an expectation maximization algorithm to provide a value to valueless records in the client database.

9. (Cancelled).

10. (Cancelled).

11. The method of claim 1, further comprising pre-analyzing the customer database to create a data management system.

12. The method of claim 1, wherein said forming includes counting the occurrences of possible combinations of data in the client database, and determining the frequencies of the data.

13. The method of claim 1, further comprising performing prior discretization of data in the client database to lower noise in the data.

14. The method of claim 1, further comprising applying expert knowledge to data in the focus database.

15. The method of claim 3, wherein the applying a state learning includes applying a clustering algorithm.

16. The method of claim 4, wherein the applying a structural learning includes applying a process selected from one of the set consisting of: directed Pareto, naïve Bayesian, directed Bayesian, recursive Pareto, whole Pareto, single MDL, multiple MDL, recursive naïve Bayesian, and whole Bayesian.

17. The method of claim 6, wherein the initial rules include a rule that columns within the client database correspond to the at least two nodes.

18. (Cancelled).

19. A method of creating a decision engine including a Bayesian network, comprising:

Retrieving data from a client database to form a focus database, wherein the retrieving includes retrieving data from a static customer database and retrieving data from a data stream;

Employing an expectation maximization algorithm to provide a value to valueless records in the focus database;

Applying a Pareto learning process to the focus database to form at least two nodes, a set of arcs to be applied between the at least two nodes, a set of states to be applied within each node, and a set of probabilities applicable to the states; and

Applying a learning process to update a structure of the at least two nodes, the set of arcs, the set of states within each node, and the set of probabilities for the states.

20. A method of using a decision engine including a Bayesian network, comprising:

Retrieving data from a client database and forming a focus database, wherein the retrieving includes retrieving data from a static customer database and retrieving data from a data stream;

Employing an expectation maximization algorithm to provide a value to valueless records in the focus database;

Applying a set of initial rules to the focus database to form at least two nodes;

Applying a first learning process to determine a set of arcs to be applied between the at least two nodes;

Applying a second learning process to determine a set of states to be applied within each node;

Applying a third learning process to determine a set of probabilities applicable to the states learned in the second learning process;

Applying a fourth learning process to update a structure of the at least two nodes, the set of arcs, the set of states within each node, and the set of probabilities for the states;

Applying evidence to at least one of the nodes; and

Updating the structure according to the applied evidence using at least one of the first, second, third, or fourth learning processes.

21. The method of claim 20, further comprising displaying at least one of the set of probabilities applicable to the states in at least one of the nodes.

22. The method of claim 20, further comprising creating, accessing, and modifying a decision tree.

23. The method of claim 22, wherein a target of the modifying is determined using an intelligent decision analysis algorithm.

24. A computer program, residing on a computer-readable medium, for creating and using a decision engine including a Bayesian network, the computer program comprising instructions for causing a computer to:

Retrieve data from a client database and form a focus database, wherein the retrieval includes a retrieval of data from a static customer database and a retrieval of data from a data stream;

Employ an expectation maximization algorithm to provide a value to valueless records in the focus database;

Apply a set of initial rules to the focus database to form at least two nodes;

Apply a first learning process to determine a set of arcs to be applied between the at least two nodes;

Apply a second learning process to determine a set of states to be applied within each node;

Apply a third learning process to determine a set of probabilities applicable to the states learned in the second learning process; and

Apply a fourth learning process to update a structure of the at least two nodes, the set of arcs, the set of states within each node, and the set of probabilities for the states.